





PCT

## RAW SEQUENCE LISTING

DATE: 01/25/2005

PATENT APPLICATION: US/10/521,230

TIME: 09:23:05

Input Set : A:\x15815.ST25.National.txt  
Output Set: N:\CRF4\01252005\J521230.raw

3 <110> APPLICANT: Songqing Na  
4 Douglas Raymond Perkins  
6 <120> TITLE OF INVENTION: Novel Proteins and Their Uses  
8 <130> FILE REFERENCE: X-15815  
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/521,230  
C--> 11 <141> CURRENT FILING DATE: 2005-01-13  
13 <160> NUMBER OF SEQ ID NOS: 24  
15 <170> SOFTWARE: PatentIn version 3.2  
17 <210> SEQ ID NO: 1  
18 <211> LENGTH: 1479  
19 <212> TYPE: DNA  
20 <213> ORGANISM: Homo sapiens  
23 <220> FEATURE:  
24 <221> NAME/KEY: misc\_feature  
25 <222> LOCATION: (1)..(1479)  
26 <223> OTHER INFORMATION: LP391  
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33 aatccccgga gacttgaggg acctccgagt agaacctgtt acaactagtg ttgcaacagg 180  
35 ggactattca attttgcata atgtaagctg ggtactccgg gcagatgcca gcatccgctt 240  
37 gttgaaggcc accaagattt gtgtgacggg caaaagcaac ttccagtcct acagctgtgt 300  
39 gaggtgcaat tacacagagg cttccagac tcagaccaga ccctctggtg gtaaatggac 360  
41 attttcctat atcggcttcc ctgttagagct gaacacagtc tatttcattt gggccctataa 420  
43 tattcctaattt gcaaatatgaa atgaagatgg cccttccatg tctgtgaatt tcacctcacc 480  
45 aggaagcctg tgggatccga acatcactgc ttgtaagaag aatgaggaga cagtagaaagt 540  
47 gaacttcaca accactcccc tggaaaacag atacatggct cttatccaaac acagcactat 600  
49 catcgggttt tctcagggtgt ttgagccaca ccagaagaaaa caaacgcgag cttcagtggt 660  
51 gattccagtg actggggata gtgaagggtgc tacggcgcag ctgactccat attttcctac 720  
53 ttgtggcagc gactgcattt gacataaagg aacagttgtc ctctgcccac aaacaggcgt 780  
55 cccttccct ctggataaca acaaaagcaa gcccggagggc tggctgcctc tcctcctgt 840  
57 gtctctgctg gtggccacat gggtgctggt ggcaggatc tatctaatgt ggaggcacga 900  
59 aaggatcaag aagacttcct tttctaccac cacactactg ccccccttta aggttcttgt 960  
61 ggtttaccca tctgaaatat gtttccatca cacaattttt tacttcactg aatttctca 1020  
63 aaaccattgc agaagtgagg tcatccttga aaagtggcag aaaaagaaaa tagcagagat 1080  
65 gggtccagtg cagtggcttgc ccactcaaaa gaaggcagca gacaaagtcg tcttccttct 1140  
67 ttccaatgac gtcaacagtg tggatgg tacctgtggc aagagcggg gcaagccac 1200  
69 tgagaactct caagacctt ccccccttgc ctttaacctt ttctgcagtg atctaagaag 1260  
71 ccagattcat ctgcacaaat acgtgggtgt ctacttttgc gagattgata caaaagacga 1320  
73 ttacaatgtc ctcgtgtct gcccccaagta ccacccatg aaggatgcca ctgctttctg 1380  
75 tgcagaactt ctccatgtca agcagcagggt gtcagcagga aaaagatcac aagcctgcca 1440  
77 cgatggctgc tgctccttgt agcccaaaaa tgagaagca 1479  
80 <210> SEQ ID NO: 2

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Input Set : A:\X15815.ST25.National.txt  
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 87 <221> NAME/KEY: MISC\_FEATURE  
 88 <222> LOCATION: (1)..(486)  
 89 <223> OTHER INFORMATION: LP391  
 91 <400> SEQUENCE: 2  
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 94 1 5 10 15  
 97 Pro Arg Glu Pro Thr Val Gln Cys Gly Ser Glu Thr Gly Pro Ser Pro  
 98 20 25 30  
 101 Glu Trp Met Leu Gln His Asp Leu Ile Pro Gly Asp Leu Arg Asp Leu  
 102 35 40 45  
 105 Arg Val Glu Pro Val Thr Thr Ser Val Ala Thr Gly Asp Tyr Ser Ile  
 106 50 55 60  
 109 Leu Met Asn Val Ser Trp Val Leu Arg Ala Asp Ala Ser Ile Arg Leu  
 110 65 70 75 80  
 113 Leu Lys Ala Thr Lys Ile Cys Val Thr Gly Lys Ser Asn Phe Gln Ser  
 114 85 90 95  
 117 Tyr Ser Cys Val Arg Cys Asn Tyr Thr Glu Ala Phe Gln Thr Gln Thr  
 118 100 105 110  
 121 Arg Pro Ser Gly Gly Lys Trp Thr Phe Ser Tyr Ile Gly Phe Pro Val  
 122 115 120 125  
 125 Glu Leu Asn Thr Val Tyr Phe Ile Gly Ala His Asn Ile Pro Asn Ala  
 126 130 135 140  
 129 Asn Met Asn Glu Asp Gly Pro Ser Met Ser Val Asn Phe Thr Ser Pro  
 130 145 150 155 160  
 133 Gly Ser Leu Trp Asp Pro Asn Ile Thr Ala Cys Lys Lys Asn Glu Glu  
 134 165 170 175  
 137 Thr Val Glu Val Asn Phe Thr Thr Pro Leu Gly Asn Arg Tyr Met  
 138 180 185 190  
 141 Ala Leu Ile Gln His Ser Thr Ile Ile Gly Phe Ser Gln Val Phe Glu  
 142 195 200 205  
 145 Pro His Gln Lys Lys Gln Thr Arg Ala Ser Val Val Ile Pro Val Thr  
 146 210 215 220  
 149 Gly Asp Ser Glu Gly Ala Thr Val Gln Leu Thr Pro Tyr Phe Pro Thr  
 150 225 230 235 240  
 153 Cys Gly Ser Asp Cys Ile Arg His Lys Gly Thr Val Val Leu Cys Pro  
 154 245 250 255  
 157 Gln Thr Gly Val Pro Phe Pro Leu Asp Asn Asn Lys Ser Lys Pro Gly  
 158 260 265 270  
 161 Gly Trp Leu Pro Leu Leu Leu Ser Leu Leu Val Ala Thr Trp Val  
 162 275 280 285  
 165 Leu Val Ala Gly Ile Tyr Leu Met Trp Arg His Glu Arg Ile Lys Lys  
 166 290 295 300  
 169 Thr Ser Phe Ser Thr Thr Leu Leu Pro Pro Ile Lys Val Leu Val  
 170 305 310 315 320  
 173 Val Tyr Pro Ser Glu Ile Cys Phe His His Thr Ile Cys Tyr Phe Thr

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Input Set : A:\X15815.ST25.National.txt  
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178	340	345	350	
181	Gln Lys Lys Lys Ile Ala Glu Met Gly Pro Val	Gln Trp Leu Ala Thr		
182	355	360	365	
185	Gln Lys Lys Ala Ala Asp Lys Val Val Phe	Leu Ser Asn Asp Val		
186	370	375	380	
189	Asn Ser Val Cys Asp Gly Thr Cys Gly Lys	Ser Glu Gly Ser Pro Ser		
190	385	390	395	400
193	Glu Asn Ser Gln Asp Leu Phe Pro Leu Ala	Phe Asn Leu Phe Cys Ser		
194	405	410	415	
197	Asp Leu Arg Ser Gln Ile His Leu His Lys	Tyr Val Val Val Tyr Phe		
198	420	425	430	
201	Arg Glu Ile Asp Thr Lys Asp Asp Tyr Asn Ala	Leu Ser Val Cys Pro		
202	435	440	445	
205	Lys Tyr His Leu Met Lys Asp Ala Thr Ala	Phe Cys Ala Glu Leu Leu		
206	450	455	460	
209	His Val Lys Gln Gln Val Ser Ala Gly Lys Arg	Ser Gln Ala Cys His		
210	465	470	475	480
213	Asp Gly Cys Cys Ser Leu			
214	485			
217	<210> SEQ ID NO: 3			
218	<211> LENGTH: 1614			
219	<212> TYPE: DNA			
220	<213> ORGANISM: Homo sapiens			
223	<220> FEATURE:			
224	<221> NAME/KEY: misc_feature			
225	<222> LOCATION: (1)..(1614)			
226	<223> OTHER INFORMATION: LP392			
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231	gaccgttcaa tgtggctctg aaactgggcc atctccagag	tggatgctac aacatgatct	120	
233	aatccccggga gacttggaggg acctccgagt agaacctgtt	acaactagtg ttgcaacagg	180	
235	ggacttattca attttgcata atgttgcgtc ggtactccgg	gcagatgcca gcatccgctt	240	
237	gttggatggcc accaagattt gtgtgacggg caaaagcaac	ttccagtcct acagctgtgt	300	
239	gagggtgcaat tacacagagg cttccagac tcagaccaga	ccctctggtg gtaatggac	360	
241	attttcctac atcggcttcc ctgttagagct gaacacagtc	tatttcattt gggccataaa	420	
243	tatccataat gcaaatatga atgaagatgg ccctccatg	tctgtgaatt tcacccatcacc	480	
245	aggctgcata gaccacataa tgaaatataa aaaaaagtgt	gtcaaggccg gaagectgtg	540	
247	ggatccgaaac atcactgctt gtaagaagaa tgaggagaca	gtagaagtga acttcacaac	600	
249	cactccccctg ggaaacagat acatggctct tatccaacac	agcactatca tcgggttttc	660	
251	tcaggtgttt gagccacacc agaagaaaaca aacgcgagct	tcagtggta ttcagtgac	720	
253	tggggatagt gaaggtgcta cggtgccagg acttgcattgt	cctaaagcac tggctgaagg	780	
255	aagccaaagag gatcactgct gtccttttt tctagaggaa	atgtttgtct acgtgctgac	840	
257	tccatatttt cctacttgcg gcaaggactg catccgacat	aaaggaacag ttgtgtct	900	
259	cccacaaaaca ggcgtccctt tccctctgga taacaacaaa	agcaagccgg gaggtggct	960	
261	gcctctcctc ctgctgtctc tgctggtggc cacatggtg	ctggtggcag ggatctatct	1020	
263	aatgtggagg cacgaaagga tcaagaagac ttccctttct	accaccacac tactgcccc	1080	
265	cattaaggtt cttgtggttt acccatctga aatatgttcc	catcacacaa tttgttactt	1140	

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267 cactgaattt cttcaaaacc attgcagaag tgaggtcatc cttgaaaagt ggcagaaaaa 1200  
 269 gaaaatagca gagatgggtc cagtgcagt gcttgcact caaaaagaagg cagcagacaa 1260  
 271 agtcgtcttc cttcttcca atgacgtcaa cagtgtgtgc gatggtacct gtggcaagag 1320  
 273 cgagggcagt cccagtgaga actctcaaga cctcttcccc cttgcctta acctttctg 1380  
 275 cagtgtatcta agaagccaga ttcatctgca caaatacgtg gtggtctact ttagagagat 1440  
 277 tgatacacaaa gacgattaca atgctctcag tgtctgcccc aagtaccacc tcatgaaggaa 1500  
 279 tgccactgct ttctgtgcag aacttctcca tgtcaaggcag caggtgtcag cagaaaaaag 1560  
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 286 <212> TYPE: PRT  
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 291 <221> NAME/KEY: MISC\_FEATURE  
 292 <222> LOCATION: (1)..(531)  
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 302 20 25 30  
 305 Glu Trp Met Leu Gln His Asp Leu Ile Pro Gly Asp Leu Arg Asp Leu  
 306 35 40 45  
 309 Arg Val Glu Pro Val Thr Thr Ser Val Ala Thr Gly Asp Tyr Ser Ile  
 310 50 55 60  
 313 Leu Met Asn Val Ser Trp Val Leu Arg Ala Asp Ala Ser Ile Arg Leu  
 314 65 70 75 80  
 317 Leu Lys Ala Thr Lys Ile Cys Val Thr Gly Lys Ser Asn Phe Gln Ser  
 318 85 90 95  
 321 Tyr Ser Cys Val Arg Cys Asn Tyr Thr Glu Ala Phe Gln Thr Gln Thr  
 322 100 105 110  
 325 Arg Pro Ser Gly Gly Lys Trp Thr Phe Ser Tyr Ile Gly Phe Pro Val  
 326 115 120 125  
 329 Glu Leu Asn Thr Val Tyr Phe Ile Gly Ala His Asn Ile Pro Asn Ala  
 330 130 135 140  
 333 Asn Met Asn Glu Asp Gly Pro Ser Met Ser Val Asn Phe Thr Ser Pro  
 334 145 150 155 160  
 337 Gly Cys Leu Asp His Ile Met Lys Tyr Lys Lys Lys Cys Val Lys Ala  
 338 165 170 175  
 341 Gly Ser Leu Trp Asp Pro Asn Ile Thr Ala Cys Lys Lys Asn Glu Glu  
 342 180 185 190  
 345 Thr Val Glu Val Asn Phe Thr Thr Pro Leu Gly Asn Arg Tyr Met  
 346 195 200 205  
 349 Ala Leu Ile Gln His Ser Thr Ile Ile Gly Phe Ser Gln Val Phe Glu  
 350 210 215 220  
 353 Pro His Gln Lys Lys Gln Thr Arg Ala Ser Val Val Ile Pro Val Thr  
 354 225 230 235 240  
 357 Gly Asp Ser Glu Gly Ala Thr Val Gln Gly Leu Ala Cys Pro Lys Ala  
 358 245 250 255

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/521,230

DATE: 01/25/2005

TIME: 09:23:05

Input Set : A:\X15815.ST25.National.txt  
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361 Leu Ala Glu Gly Ser Gln Glu Asp His Cys Cys Ser Phe Phe Leu Glu  
 362 260 265 270  
 365 Glu Met Phe Val Tyr Val Leu Thr Pro Tyr Phe Pro Thr Cys Gly Ser  
 366 275 280 285  
 369 Asp Cys Ile Arg His Lys Gly Thr Val Val Leu Cys Pro Gln Thr Gly  
 370 290 295 300  
 373 Val Pro Phe Pro Leu Asp Asn Asn Lys Ser Lys Pro Gly Gly Trp Leu  
 374 305 310 315 320  
 377 Pro Leu Leu Leu Ser Leu Leu Val Ala Thr Trp Val Leu Val Ala  
 378 325 330 335  
 381 Gly Ile Tyr Leu Met Trp Arg His Glu Arg Ile Lys Lys Thr Ser Phe  
 382 340 345 350  
 385 Ser Thr Thr Thr Leu Leu Pro Pro Ile Lys Val Leu Val Val Tyr Pro  
 386 355 360 365  
 389 Ser Glu Ile Cys Phe His His Thr Ile Cys Tyr Phe Thr Glu Phe Leu  
 390 370 375 380  
 393 Gln Asn His Cys Arg Ser Glu Val Ile Leu Glu Lys Trp Gln Lys Lys  
 394 385 390 395 400  
 397 Lys Ile Ala Glu Met Gly Pro Val Gln Trp Leu Ala Thr Gln Lys Lys  
 398 405 410 415  
 401 Ala Ala Asp Lys Val Val Phe Leu Leu Ser Asn Asp Val Asn Ser Val  
 402 420 425 430  
 405 Cys Asp Gly Thr Cys Gly Lys Ser Glu Gly Ser Pro Ser Glu Asn Ser  
 406 435 440 445  
 409 Gln Asp Leu Phe Pro Leu Ala Phe Asn Leu Phe Cys Ser Asp Leu Arg  
 410 450 455 460  
 413 Ser Gln Ile His Leu His Lys Tyr Val Val Val Tyr Phe Arg Glu Ile  
 414 465 470 475 480  
 417 Asp Thr Lys Asp Asp Tyr Asn Ala Leu Ser Val Cys Pro Lys Tyr His  
 418 485 490 495  
 421 Leu Met Lys Asp Ala Thr Ala Phe Cys Ala Glu Leu Leu His Val Lys  
 422 500 505 510  
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 429 Cys Ser Leu  
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 449 aatccccgga gacttggagg acctccgagt agaacctgtt acaactagtg ttgcaacagg 180  
 451 ggactattca attttgcata atgtaagctg ggtactccgg gcagatgcc a ccatccgctt 240

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/521,230

DATE: 01/25/2005

TIME: 09:23:06

Input Set : A:\X15815.ST25.National.txt

Output Set: N:\CRF4\01252005\J521230.raw

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L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date